CREDO DDM
metal detector

User Manual

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General Description

The CREDO DDM is an Analogue Induction Balance (IB) metal detector that operates in the very low frequency (VLF) range and it is designed for use on all Inland Sites and Tidal Salt Water Beaches. It may be used in any of the three basic modes of operation - Auto, All-Metal or Discriminate.

The CREDO DDM is designed to be a general-purpose metal detector, capable of finding both small and large targets at extreme depths.

The standard coil supplied is the 13”DD and this is ideal for general searching operations.
There are 4 different DD search coils that can be used as accessory with the CREDO DDM.

DD shape search coil range.

- **13"DD at 6kHz**
General search coil designed for higher detection ratio of small, medium and large targets in normal search conditions. It exhibits greater depth than any other DD search coil made by other competitive brands. It detects 18mm coin at 28 cm with very loud signal responses.
Due to large search area it will find more targets for shorter period of time compared to smaller search coils. Not suitable for mineralised conditions due to high probability of producing multiple signal responses.
Extend of detection dept not fully tested yet.

- **10"DD at 7kHz**
It could be the best general search coil that you'll ever need. It exhibits excellent dept and discrimination in most conditions. Very efficient in detecting small targets at great dept. Very fast in isolating individual targets. It detects 18mm coin at 28cm with very good signal response.
Extend of detection dept not fully tested yet.

- **10"DD at 18kHz**
Specially designed for gold nuggets and small targets at great dept.
Extend of detection dept not fully tested yet.

- **7"DD at 8kHz**
General search coil designed for quick scan of new detecting fields and areas. Very good for searching narrow spaces, holes and ditches. Best suited for small and medium targets in contaminated areas.

Each coil is tuned to a slightly different frequency within the design range, to minimise interference from other Nexus detectors. Performance values for all Nexus detectors will be identical.

To obtain the best results with the CREDO DDM, as with all metal detectors, it is essential to understand the settings and operation of the detector.

The Auto mode of the CREDO DDM will provide exceptional quality results in the hands of every user, regardless of their experience with metal detectors. With the CREDO DDM everyone can enjoy the benefits of the deep seeking Nexus technology, both novice and professional alike.

As a general rule the best results will always be obtained when the CREDO DDM is properly set in manual mode. Therefore users will need to practice

and experiment in order to obtain the best possible results on any particular site. All sites and soils are different and settings that will give good results on one site may be less successful if used elsewhere. The CREDO DDM is designed to detect the very deepest of targets and operates near to the limits of what is achievable with induction balance.

Assembly & Preparation

The CREDO DDM is supplied boxed and ready for quick assembly by simply attaching the two lower stem poles to the top one, tightening the collars and attaching the coil to the lower stem section, using the plastic bolt and friction washers supplied and tightened by hand so that coil is held at the correct angle to the stem; the coil cable plug is inserted to the socket in the control box and then tighten the knurled ring, taking care when winding the cable around the stem that the cable is not strained.

The centre stem pole is of the same tube diameter as the top one and can be left off in circumstances where a short stem is needed; it is meant for use on steep sites, river banks, caves, ditches and similar conditions. This configuration is also useful if the CREDO DDM is to be used by children and makes it a good family metal detector that can be used by anyone in the family.

The CREDO DDM is supplied with a drop in battery holder that can be used for all types of AA size batteries, (alkaline or rechargeable); a charging socket is provided to the battery box for connecting a charger unit. To insert or change batteries remove any three of the thumb plastic screws from the base lid of the battery box (the battery box is below the arm cup at the top of the detector stem) and loosen the fourth screw. Turn the cover to the side. Insert the 10 batteries, in their correct alignments, into the plastic holder and make sure that all the terminals have a good electrical contact. Locate the battery holder into the compartment, ensuring the connecting terminals of the battery holder are in good contact with the two electric spring loaded terminals behind the recharge socket. Do not over-tighten the plastic thumb screws when refitting.

If you wish to use headphones (highly recommended) connect your available set to the 6 mm jack socket on the battery box. The CREDO DDM has an internal loudspeaker so headphones are not absolutely essential. For any headphones that have a volume control, ensure that this is set to

MAXIMUM and use the CREDO DDM *Volume* knob on the control box to set the volume level.

Controls

The CREDO DDM has six rotary control knobs and three toggle switches (two located on the front panel of the control box and one underneath the control box).

DDM – Definite Discrimination Meter
The DDM meter is based on LED technology and provides a reliable visual discrimination analysis in All-Metal Mode and Iron Rejection Mode. The bar will light RED for non ferrous targets and will not indicate Iron targets.

Discrimination
This knob sets the level of the discrimination. Rotating the *Discrimination* knob clockwise (from 0 to 10) will INCREASE the level so that Iron is increasingly not detected (but high settings will result in the loss of potentially good targets). Generally, the discrimination level should be set

as low as is possible; to avoid masking the smallest and deepest desired targets.

Ground Balance
This knob is used to set the balance of the CREDO DDM to suit the soil conditions on any given site.

Threshold and Auto Mode
This knob sets the level of the threshold tone. The CREDO DDM may be operated in silent mode, with no audible background tone or with this tone set to give a slight tone level. In order to readily discern the faintest and smallest of signals, operation with a slight background tone is recommended.

The *Threshold* control knob is combined with a switch that enables the **Auto function**. When the *Threshold* knob is turned fully anti clock wise the switch will click and the Auto function will automatically set base levels for the Threshold, Discrimination, Ground Balance and Iron Rejection controls (those controls will not work manually unless the Auto Mode is turned off from the *Threshold* knob). In Auto mode, the Sensitivity level is recommended to be set to minimum.
Once the Auto function is turned on three LED lights will indicate that Ground balance, Discrimination and Threshold are automatically controlled.

Sensitivity
This knob controls the level of sensitivity of the responses. The sensitivity level setting chosen will depend on the soil conditions but, in general, the highest possible setting should be used. On contaminated or mineralised sites, it may be necessary to reduce the sensitivity to avoid some false signals.

Volume and Power On/Off switch.
This knob sets the volume of the tone and responses and it is used also to turn on/off the CREDO DDM. This knob should always be used for setting the volume. Any volume control on the headphones should be set to MAXIMUM.
When the Power is turned on an LED light above the Volume control knob will indicate that detector is turned on.

Multitone.
This knob activates and adjusts the audio discrimination option and gives a high-pitched tone response for non ferrous and low-pitched tone for ferrous (iron) responses.

Mode Toggle Switch
Located under the control box and accessible from the hand-grip, this toggle switch is used to change operating modes. When pushed to the left, the CREDO DDM operates in Discrimination Mode. In the right position, the Nexus Standard Mk II operates in All-Metal Mode.

Battery Test Toggle Switch.
This is located on the front panel of the control box. It is used to check the condition of the batteries by using the DDM; if the meter bar lights one third or less of its length, changing or recharging the batteries is recommended.

Recovery Toggle Switch.
This is located on the front panel of the control box. It is used to control the recovery or reset speed of the detector for Slow, Middle and Fast reset. A slow recovery is best for sites with few signals and a fast recovery for sites with many signals or contamination.

General Operation and Setting Up

Having assembled the CREDO DDM, inserted batteries and connected the headphones, the metal detector is ready for use.

If you are a novice metal detector user.
Simply turn on the Auto Mode, activated on the Threshold control knob on and start detecting. With a little time and practice, as you gain experience with the detector, you can progress to Manual Modes, already then having some idea of what most target responses will be like. A minimum Sensitivity level is recommended in Auto Mode to minimise clicking or/and possible false signals.

If you have some metal detector experience.
We recommend the Auto function above for at least the first couple of days.

If you have considerable experience with metal detectors.
No metal detector, however powerful, will operate at its best unless it is set up properly for the conditions in which it is to be used. To obtain the best results and maximum depth and sensitivity to desired targets, the Nexus Standard Mk II must be properly tuned to the site and the settings to achieve this are set out below.

Full Manual Set-Up

Firstly, ensure that no metal is in close proximity to the coil. It is also advisable to carry out the tuning and setting up of the CREDO DDM away from other metal detectors or potential sources of electronic interference.

Turn the CREDO DDM on. A tone will be heard and the DDM meter will flash. The tone will fade and the meter bar will settle after a few seconds.

To check the condition of the batteries, turn the Battery Check toggle switch up. After the battery check is been done turn the toggle switch down to enable the DDM to indicate metal targets. Keeping the DDM indicating the battery condition continuously will drain the batteries fast.

Holding the CREDO DDM with the coil well above ground level, adjust the *Sensitivity* control knob to minimum. Adjust the *Threshold* knob to obtain a minimal (faint) tone setting. Adjust the *Volume* knob to set a comfortable level (remembering to set any adjustable headphone volume control to MAXIMUM). Lower the coil to the ground and sweep side to side slowly to ensure that there are no metal targets in the place you are tuning the detector When you are satisfied proceed as follows.

Position the coil about 3" above and parallel to the ground surface. Raise the coil gently to about 10" (250 mm) above the ground and lower back to 3" (75 mm) above ground several times. Note whether the threshold tone remains the same or if it increases or decreases in intensity while raising and lowering the coil. If the tone rises when LOWERING the coil towards the ground, then adjust the *Ground Balance* knob slightly in the clockwise direction. If the tone rises when LIFTING the coil away from the ground, then adjust the *Ground Balance* knob slightly in the anti-clockwise direction. Repeat this procedure to check and if the tone remains constant, the ground balance is set properly.

IF THE GROUND BALANCE IS INCORRECTLY SET THE DDM METER WILL INDICATE FALSE SIGNALS FROM THE GROUND MINERALS.

<u>To achieve the best ground balance tuning, it is essential that the coil be held parallel to the ground surface at all times during the procedure</u>.

The next setting is to adjust the *sensitivity* to suit the site conditions. From the minimum setting of the *Sensitivity* knob (set at minimum in the initial ground balancing procedure), adjust the control clockwise to increase the sensitivity. Repeat the procedure of raising and lowering the coil between 3" (75 mm) and 10" (250 mm) above the ground surface, as for ground

balancing. If there is no change in tone while doing this, then the sensitivity may be increased further. For best results, the setting should be at the maximum possible while maintaining a stable threshold tone. At maximum sensitivity settings, a slight tone change may be noted when both raising and lowering the coil. This will not adversely affect the operation of the CREDO DDM, providing that the coil is kept at a reasonably constant level above the ground surface and parallel to it while detecting.

Setting the desired Discrimination level is done by rotating the *Discrimination* knob clockwise to INCREASE the discrimination level and REDUCE the sensitivity to ferrous (iron); higher than necessary settings will result in desired targets being missed. Rotating the *Discrimination* knob anticlockwise will DECREASE the discrimination level and INCREASE the sensitivity to ferrous (iron) targets.

In general, an effective method of setting the Discrimination level, suitable for most search conditions, is by passing a rusty iron nail (about 50mm long) close to the search coil. Rotate the Discrimination knob clockwise until the iron nail is rejected in every possible position against the coil. After this procedure check if small non-ferrous targets are detectable without loss of depth.

Finally, check again the threshold and volume settings for comfortable levels.

The CREDO DDM is now set up for the particular site conditions and is ready for use.

Search Method

With the CREDO DDM set up and ready, the coil should be swung smoothly from side to side, a little above the ground surface. The sweep speed should be according to the *Recovery* settings. It is not effective to 'scrub' the coil on the surface of the ground (this can also damage the coil and places strain on the stem assembly).

Suggested operating heights for the standard coils are:
13" DD coil: 2" (50 mm) minimum above ground surface
10" DD coil: 1½" (40 mm) minimum above ground surface
7"DD coil; Any distance.

Make sure that the coil is swung evenly over and parallel to the ground surface and that the coil does not rise at each end of the swing. Cover the ground in smooth, parallel swings to ensure maximum detection coverage.

In **All-Metal Mode**, both ferrous and non-ferrous targets will give the same audio response (unless the Multitone function is turned on) by a sudden increase in the intensity of the threshold tone. A strong response indicates a large or relatively shallow target and a weak response indicates a small or deep target. Any audio signal in All-Metal Mode may be analysed by using the DDM meter. To analyse a signal with the Meter observe its light response.

In **Discrimination Mode**, good non-ferrous targets will give a clear, well-defined, two-way, repeatable audio signal. Ferrous targets will give a 'clicking' audio response or an indistinct and erratic response.

Pinpointing is by simply X-ing the coil across the signal. The position where the signals are strongest below the coil centre indicates the target position. As with all detectors, when targets are of complex shape or are located at an angle in the soil, pin-pointing may not be entirely accurate so it is suggested that, when digging, the user allow space to avoid possible damage to finds.

Special Modes of operation.

Discriminating Against Ground Minerals in severe mineral conditions.

If normal Ground Balance proves to be ineffective in dealing with the Ground Minerals then the recommended settings here will help to overcome the problem. To cancel out the effect of Ground Minerals, turn on the Iron Rejection Mode using the toggle switch under the control box; this switch is moved to the LEFT.

Lower and raise the search coil over the ground surface, as you would do in the standard Ground Balance procedure. Begin turning the *Ground Balance* knob anti-clockwise, slowly while swinging the coil until the ground mineral signals reduce to small clicks. Now the CREDO DDM is now ready to work in severe Ground Mineral conditions.

Discriminating Against 'hot rocks' and metallic ore.

In some instances, the ground balance and/or Discrimination settings may not be sufficient to remove the audio responses from some types of 'hot rocks' or highly metallic ore pieces.

If this proves to be a nuisance while detecting, the procedure required to remove the hot rocks and/or metallic ores from the audio signals, or at least

to reduce their interference, is similar to that used for Discriminating Ground Minerals.

To remove the hot rocks and/or metallic ores from the audio signals turn on the Iron Rejection Mode using the toggle switch under the control box; this switch is move to the LEFT.

Start swinging the search coil over a sample of the specific type of a hot rock or ore piece that you wish to be removed from the audio responses, positioned as you would detect them during normal searching. Begin turning the *Ground Balance* knob from approximately middle position in anti-clockwise direction, slowly and while swinging over the target until the audio signal reduces to clicks. The CREDO DDM is now able to work effectively in fields loaded with hot rocks or metallic ore pieces.

Discriminating Against Salt Water on wet sand or tidal beaches.
The procedure is very similar to that used for 'hot rocks' and minerals; After initial set-up, begin turning the Discrimination knob from position 0 to clockwise direction, very slowly until the salt water signals turn into small clicks. Keep the Ground Balance know in position where the ground minerals are usually cancelled (balanced out). The CREDO DDM is now ready to work on the beach.

Discriminating Against Large Metal Objects (leaving only the smaller ones) and Special Gold Nugget hunting setting.

There are some conditions where only small targets are required in a particular search; desirable targets such as gold nuggets or tiny coins. These are especially difficult to search for in contaminated conditions or in the presence of mineralised soils.

To remove all large targets and leave only the desired very small objects, make sure that the Discrimination level is set to allow your desired small targets to be in the range of good (non-ferrous) targets. Turn on the Iron Rejection Mode using the toggle switch under the control box; this switch is moved to the LEFT

Begin swinging the coil over any target that you wish to remove from the audio responses. While swinging the coil, start turning the Ground Balance knob anti-clockwise position as slowly as possible. Keep doing so until all large targets and minerals are removed and only the gold nuggets and smallest non-ferrous objects are left for detection.
The CREDO DDM is now ready for hunting only those small targets.

Note: Gold nuggets and all small targets are best detected at the standard ground balance setting in All Metal Mode. This procedure is only recommended in severe contamination or bad mineral conditions. As setting the detector in this way will result in a high discrimination setting, while rejecting all large targets, there will be also a loss of depth for the remaining small targets as much as 50%.

Discriminating Against Small Targets and leaving only larger metal objects.

Many treasure hunters have been looking for the perfect metal detector. One of those aims is for a detector that is capable to ignore or not detect at all small metal objects such as coins, bottle caps even ring-pulls and detect only larger metal targets such as hoards, metal pots, helmets, shields etc.

To reject all small metal targets after proper Ground balance is been done turn the Iron Rejection Mode on, the Mode switch to the left.
Place on the ground surface samples of all small targets that you do not wish to be detected.

Start swinging the search coil closely over the unwanted targets. While doing so start turning slowly the Discrimination knob from position 0 towards position 10, clockwise. Keep doing so until all small targets are giving small clicks in the audio responses and also not giving a response on the DDM meter. Now the CREDO DDM is ready for hunting larger objects only.

Note; During this procedure discriminating hot rocks and /or metallic ore may not be possible or with great limitations. Using a considerable level of discrimination against hot rocks and/or metallic ore during this procedure will result in **detecting only medium size targets.**

Tips

The CREDO DDM may seem different in operation to some detectors presently available. Some practice and experimentation with the settings is necessary to get the best results on different sites.

Users should persist and regular use over a reasonable period is likely to be needed to become proficient, especially in successfully locating the very deepest and smallest of targets.

It must always be remembered that no detector can find what is not there – nor can any detector give a signal unless the coil is passed directly over that target!

There will always be sites on which any single detector does not work to peak efficiency. All detectors and sites are different and a particular combination of frequency and filtering might be best on a specific site, although the range of accessory coils available for the Credo DDM will allow effective operation under almost all conditions and for all types of targets.

Site conditions will significantly affect depths and performance. Heavily furrowed, broken ground or thick stubble are all especially difficult ground types to search. Sites where the ground conditions vary to a considerable degree may require the Ground Balance to be adjusted from time to time for best results.

Care of the CREDO DDM

All metal detectors are precision instruments and require careful handling to ensure they remain in good working order.

Avoid dropping, impacts or violent shaking of the detector and protect it while transporting.

The detector should not be used in extremely wet weather conditions, without protecting the control box and the battery. The coil assembly is fully waterproofed.

If water penetrates any of the boxes, switch off the detector and remove the batteries. It is suggested that the detector be placed in a warm place to dry out slowly.

Mud and soil should be carefully removed, using a damp cloth or water only. Do not use detergents or abrasives and avoid getting water in the control boxes.

When storing the detector for long periods or when shipping, the batteries should be removed. Avoid storing the detector in areas where it will be exposed to extreme temperatures, dust, moisture or contaminants.

Do not attempt to modify or repair the detector or allow any unauthorised repair centre to do so.

Guarantee

The CREDO DDM metal detector is guaranteed for a period of 24 months from date of purchase against all manufacturing defects.

The Control Box is sealed and contains no user-serviceable parts Opening the Control Box will invalidate the Guarantee.

This Guarantee does not cover:

Damage due to dropping, impact or accident
Damage due to improper use or care of the detector
Damage resulting from leakage of batteries
Damage to the coil or coil cable

In the event of any problem, please contact us. Any detector returned under Guarantee must be properly packed, preferably in the box supplied and be sent by insured carrier. The sender is responsible for any loss or damage in transit.

A full repair and replacement parts service is available.

Technical Specifications:

Operating Frequency Range	6-18kHz kHz
Coil Design	DD
Coil Weights	13”DD - 650gr.10”DD - 540g;7”DD - 350gr.
Weight (main unit only)	1.0 kg (without batteries)
Coil Case Construction	ABS plus Fibreglass
Audio Frequency	Custom tuned
Audio Output	6mm stereo headphone jack
Power Supply	15v (10 AA alkaline or rechargeable batteries.)
Battery Life	up to 40 hours
Operating Modes	All-Metal , Discriminate and Auto tune.
Optimum Temperature Range	-15° to +60° C
Optimum Humidity Range	0 to 85% RH

Troubleshooting

1. **The detector does not turn on.** Check the batteries. If they are old replace them with new. Make sure the batteries are properly inserted into the battery holder and have a good electrical contact.
2. **The detector is giving too many false signals.** If this happens first turn the Sensitivity to 0, minimum level. Check the Ground Balance if it is adjusted correctly according to the ground balance procedure. If the problem still persist check if the soil does not contain hot rocks or other contaminants. If this is the case then use Silent Motion and /or Iron Rejection to stop the interference. Auto mode will also assist in such conditions.
3. **The detector is picking up too much Iron.** Check the Discrimination level according to the recommended settings or use Auto mode.
4. **I only plug the search coil and detector does not work after that.** Make sure that it is the correct search coil for your Nexus model. The search coils for Credo DDM are not interchangeable with the Nexus Standard MkII and vice versa.
5. **One or more control functions does not work.** Make sure that you know how to use those control functions according to this User Manual. In case that any of the control functions do not cause any change of response in the detector functions then return the detector to your dealer for check and possible repair.
6. **The detector is unstable.** Make sure **not to** use the detector with full Sensitivity while using fast Recovery speed setting. Fast Recovery setting and high Sensitivity together will result in considerable amount of chatter in the loudspeaker and/or headphones. If this is not the case check for sources of electronic interference.
7. **The detector stopped working during rain.** Nexus detectors are not water or weather proofed. Knowing that we strongly recommend that no Nexus metal detector model is used in rain. If this happens turn off the power of the detector from the Volume knob. Take out the batteries and leave the detector near a warm place for a couple of days to dry out. After that if still not working return the detector to your dealer for maintenance and repair.